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(71)Applicant **FUJI XEROX CO LTD**

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(72)Inventor : **KOJIMA SATOSHI**

(54) **FILE SYSTEM**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a filing system which can be referred to from a user side for personal information by managing the personal information on a server side.

SOLUTION: The server 82 of a filing system is provided with a reference table 20 which stores a reference record whenever a document database 84 is accessed on its outside. The server 82 is also provided with an additional information table 30 on which a user who makes reference to the table 20 marks a score or comment for the contents of a file at every access on the outside. The server 82 retrieves the tables 20 and 30 based on a reference information retrieval request from a client 80. The server 82 can retrieve the table 20, etc., by using the name of the user as a key. Since the user who makes reference to the file can record a score about the contents of the file and the score is stored on the additional information table 30, the effectiveness of the file can be discriminated without checking the contents of the file.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to a file system, especially the system called an electronic filing system.

[0002]

[Description of the Prior Art]Two or more files are managed intensively and the electronic filing system provided with the function to search the file which a user needs is used widely. In this electronic filing system, since the file to manage is common property in many cases, the function which writes in each user's personal information positively is not realized.

[0003]

[Problem(s) to be Solved by the Invention]Since the conventional electronic filing system was not able to record personal information in this way, there are the following problems.

[0004](1) it cannot be judged immediately whether measure and the file which it is going to refer to carried out past reference.

[0005](2) Next, even if it becomes clear that it was referred to in the past, the contents of the file cannot judge in many cases whether it was useful for the user. When it cannot judge, it is necessary to read the file once again and to check the contents. Therefore, excessive communication cost may occur.

[0006](3) When an individual manages required additional information by a client side further, the information cannot be referred to if a client is changed. That is, ? and its file are unable for the information concerning an individual, for example, a user, to have accessed which file, or to provide [whether it is useful information and] a user with ? and information useful about ** in this way, at a user.

[0007]The purpose aims at enabling reference of personal information irrespective of the kind of terminal to be used by accomplishing this invention in view of the starting technical problem by managing the information concerning an individual by the server side of an electronic filing system.

[0008]

[Means for Solving the Problem]In order to solve an aforementioned problem, in this invention, a means to set up a field which can be written in by user in a server of an electronic filing system is formed. A realm name specified by a client to set up, a means to analyze that value, a means to register this analysis result as information over a file, and ** are provided.

[0009]In this invention, a means to add a user situation for every file to search results of a file, and to create an indicative data is formed. A means to transmit an indicative data created by this

preparing means to a client is formed.

[0010]Specifically, this invention has the following composition.

[0011]In a file system which manages a file in order that the 1st this invention may solve an aforementioned problem, A grant means to give personal information of a user of said file system to each file which said file system manages, A personal information recording device which records said personal information given by said grant means for said every file, and a disclosing means which releases said personal information currently recorded on said personal information recording device in order that each user may refer to it are included.

[0012]Recordable [personal information], since this information can refer to each user, it becomes possible to understand those contents that there is no direct reception [contents / of a file] to some extent.

[0013]The 2nd this invention contains a search means to search said file, in a file system of the 1st this invention based on said personal information currently recorded on said personal information recording device, in order to solve an aforementioned problem.

[0014]Although a file was searched with this invention based on personal information, it is also preferred to constitute so that the personal information itself can be searched. A file can be searched based on the contents of personal information rather searched just because personal information could be searched.

[0015]The 3rd this invention is characterized by said personal information being information including evaluation to said file of said user in a file system of the 1st or 2nd this invention of the above, in order to solve an aforementioned problem.

[0016]Since evaluation is included in personal information, the file is able to attach a rule of thumb of being a useful thing. It is preferred to use the number of addition points, etc. as evaluation, as an embodiment mentioned later is shown.

[0017]The 4th this invention is characterized by said personal information being information including a comment to said file of said user in a file system of the 1st or 2nd this invention of the above, in order to solve an aforementioned problem.

[0018]Since a comment is included in personal information, the file is able to attach a rule of thumb of being a useful thing. As for especially a thing that cannot be expressed with numbers, such as the special feature of the file, expressing by a comment is preferred.

[0019]In a file system which manages a file in order that the 5th this invention may solve an aforementioned problem, When reference is performed to each file which said file system manages, a reference recorded information recording device which records the reference recorded information for every file, and a disclosing means which releases said reference recorded information which said reference recorded information recording device records in order that each user may refer to it are included.

[0020]Since [register / and / reference record over a file] this information can refer to each user, it is possible to see the usefulness of a file from referring frequency of a file, etc.

[0021]The 6th this invention contains a search means to search said file, in a file system of the 5th this invention based on said reference recorded information registered into said reference record registration means, in order to solve an aforementioned problem.

[0022]Although a file was searched with this invention based on reference recorded information, it is also preferred to constitute so that the reference recorded information itself can be searched. A file can be searched based on reference recorded information rather searched just because reference recorded information could be searched.

[0023]In order that the 7th this invention may solve an aforementioned problem, in a file system

of the 5th or 6th this invention, said reference recorded information contains said file name which said user referred to.

[0024]Since a file name is contained in reference recorded information, it is possible to get to know frequency of reference (access) to the file, the number of times, etc.

[0025]In order that the 8th this invention may solve an aforementioned problem, in a file system of the 5th or 6th this invention, said reference recorded information includes a user name which referred to the file.

[0026]Since a user name is included in reference recorded information, a file which the user referred to can be known and it becomes possible to get to know a file which a leader used in a case where it is going to begin study in a predetermined field etc.

[0027]In order that the 9th this invention may solve an aforementioned problem, in a file system of the 5th or 6th this invention, said reference recorded information includes time at which said user referred to the file.

[0028]Since time is included in reference recorded information, a temporal change of the referring frequency, change of reference frequency, etc. can be known.

[0029]

[Embodiment of the Invention]Hereafter, the suitable embodiment of this invention is described based on a drawing.

[0030]In this embodiment, it has the reference table 20 for storing the information on file reference for every access apart from storing the contents of the file which a user refers to. Whenever a user performs access (reference) to a file in this reference table 20, that accessed file ID and additional information, such as a date referred to, are stored by a filing server.

[0031]In this embodiment, the additional information table 30 for storing the additional information for every user is also formed further independently [this reference table 20]. And when a user wishes, the individual information about the file which that user referred to can be stored in this additional information table 30.

[0032]When a user performs predetermined access to a filing server (henceforth a server), and displaying a file list etc., for example, with reference to the reference table 20, a predetermined file list can be returned to the server side.

[0033]As for this file list, based on the reference table 20, display processing is performed in accordance with the fixed standard. For example, the thing to which access is performed by the file by which access is not made at all, or fixed frequency, Or processing of classifying the name of a file by color in accordance with the standard of that etc. to which access is performed frequently, or changing the shape of the icon showing the file is performed.

[0034]If directions of the purport that the additional information table 30 is referred to are taken out from a user to a server when returning a file list, it will inspect about whether there is any predetermined additional information to the data displayed in a file list with reference to the additional information table 30 in the server side. As a result of this inspection, it is a file displayed, and that additional information is also added about the file in which additional information is stored, and a file list is created. A server returns the file list which was carried out in this way and created to a client.

[0035]The explanatory view showing the example of the table format of the electronic filing system concerning this invention is shown in drawing 1. This electronic filing system is provided with the file control table 10 like the conventional filing system as shown in this drawing 1. This file control table 10 is a table used when actually managing a file. Each item of (it only being described as ID in a figure) with ID of a file, a file name, an implementor name, and a creation

date and ** is stored in each entry of this management table 10.

[0036]In the electronic filing system concerning this embodiment, it has the reference table 20 other than the above-mentioned file control table 10 (refer to [drawing 1](#)). This reference table 20 is a table which stores the reference record over a file, and similar composition existed also in the conventional filing server. However, the reference table 20 concerning this embodiment differs from the conventional similar composition greatly at the point currently opened to the user. Thus, it being characteristic in this embodiment is that the contents of the table which manages the information on reference over a user's file are opened to the user.

[0037]Now, whenever a user checks the contents of a file (reference), that reference record is registered into this reference table 20 every. It is preferred to exhibit those contents to all the users so that it may mention later, and as for this reference table 20, limiting and opening only to some users is also preferred. Each entry of this reference table 20 includes each item of access ID (in a figure, it is described as AccID) for identifying each reference operation, file ID which was the targets of reference, a reference day, and a referencing person name and ** as shown in the figure. By using this reference table 20, the user can get to know the referring frequency of a certain file, etc. Therefore, it becomes possible to perform file search by referring frequency etc., etc. so that it may mention later.

[0038]In the electronic filing system concerning this embodiment, it has the additional information table 30 (refer to [drawing 1](#)). This additional information table 30 is characteristic composition in this embodiment, and is a table which manages additional information, such as a comment which the user wrote in to the file. When the information about evaluation of the validity of the file content of opposite *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Deene., etc. is written in that file, a user is stored in this additional information table 30 as information, including that evaluation, is shown in [drawing 1](#). On this additional information table 30, a user becomes possible [performing file search based on the information which other users (and natural that user) wrote in etc.]. This file search is also mentioned later.

[0039]Each entry of this additional information table 30, Access ID for identifying each reference operation, the number of referencing person addition points which is the number of addition points which the user who referred to it gave to the file, and the referencing person comment which is comments which the referencing person attached to the file are included as shown in [drawing 1](#). Although two, mark, and a comment and **, were made into the contents as contents of the additional information table 30 in the example shown in [drawing 1](#), if it is the information which it tries to write in intentionally from a user, it is possible to store in this additional information table 30 for any information.

[0040]In the filling system concerning this embodiment, each table is combined by ID (file ID) and AccID (access ID), respectively as shown in this [drawing 1](#) (link).

[0041]As [retrieving operation ****](#) was carried out, in the electronic filing system concerning this embodiment, the reference table 20 and the additional information table 30 are formed, and the reference information to a file is opened to the user. A user is able to perform file search using the information positively written in to the contents of a file.

[0042]Here, the search which explained from the conventional file search using a file name etc. first, next used the reference table 20 etc. is explained.

[0043]The example of the file search screen which is a user interface (UI) of the file search based on a file name etc. is shown in [file search drawing 2](#).

[0044]In the example shown in [drawing 2](#), the search which made the retrieval item the "file name", a "implementor name", and a "creation date" of the file control table 10 is possible. The

specification method of conditions can choose "=" ">=" "<=" ">" "<" and "!=" with the menu 50. The character string to search is inputted into the text field 52. When a search condition targets a character string, it is set up so that it can carry out the menu selection of "=" and "!=" (in being a file name and a maker).

[0045]In inputting nothing into the text field 52, as conditions for search, it does not use the element. The whole of each element is combined by AND conditions, and search is performed.

[0046]Each of file names shown in drawing 2, implementor names, and creation dates is the items of the file control table 10, and search using these items was performed from the former. In the example of the screen shown in drawing 2, the search start button 54 and the reset button 56 are shown. The search start button 54 is a button for starting search based on the data inputted into the text field 52, and the reset button 56 is a button for clearing the contents inputted into the text field 52.

[0047]The example of a screen display which shows the result of file search is shown in drawing 3. Six files are found as a result of file search as shown in drawing 3. They are "test6.txt(s)" from "test1.txt." The check box 60 is formed in the left-hand of each file name for every file as shown in the example of drawing 3. The file to which the check was given is taken out by checking with a mouse etc., then taking out this check box 60, and pushing the button 62. Thus, a user searches a file and it is possible one piece or to take out a desired file two or more pieces out of the found-out file.

[0048]When a file is actually taken out in this way in the electronic filing system concerning this embodiment, the information on file reference on the reference table 20 is newly added and stored.

[0049]The example of the file search only using the contents stored in the file control table 10 in the example of the retrieval picture shown in the file reference information retrieval chart 2 is shown. In the electronic filing system concerning this embodiment, as mentioned above, the file search based on the item stored in the reference table 20 or the additional information table 30 is also possible. The example of the retrieval picture in the case of performing such file search, i.e., file reference information search, is shown in drawing 4.

[0050]For example, the case where another search information as a result of taking out a predetermined file and referring to the contents based on the result of the file search shown in drawing 3 is used as a search condition etc. can be considered. For example, when file search is performed from a viewpoint "some high files of referring frequency are ?", "some files of the effective contents which are actually useful are ?", etc., it is desirable to perform file search using the item stored in the reference table 20 or the additional information table 30. The example of the file search using such an item is shown in drawing 4.

[0051]In the example shown in drawing 4, it is possible to perform file search which used a "file name", a "implementor name", a "creation date", "reference frequency", the "reference day", the "referencing person name", the "referencing person comment", and the "number of referencing person addition points" as a retrieval item. The specifying method method of conditions can specify coincidence conditions by referring to "=" ">=" "<=" ">" "<" and "!=" like drawing 2 with the menu 50 like the example shown in drawing 2. A search string is inputted into the text field 52 like drawing 2. It is the same as that of above-mentioned drawing 2 to be set up so that "=" and "!=" can choose from the menus 50, when a search condition targets a character string. When nothing is inputted into the text field 52, about the element, it does not add to a search condition.

[0052]The object searched by the search condition specified by the file reference information

retrieval picture shown in drawing 4 is file reference to the last, and is not the file itself. If it puts in another way, the object of direct search will be the reference table 20, and will be the contents of the additional information table 30. In this embodiment, file search of the technique currently first performed from the former was performed, and the case where it searched further based on the contents of the reference table 20 or the additional information table 30 was explained based on the result.

[0053]In the filling system concerning this embodiment, a display is performed in the viewpoint [search results / the] "who is evaluating how and when with reference to what" as shown in drawing 5.

[0054]The display example of the file reference information search results which are the result of performing search according to the search condition shown in drawing 4 is shown in drawing 5. In this display, the file reference of a displaying object is main strictly, and its file is not main. Therefore, a display is performed by the standard "who is evaluating how and when with reference to what."

[0055]The check box 70 is formed in the left-hand of each file name for every file as shown in drawing 5. And in checking that the file is effective information as a result of taking out a file and adding the score and comment to the file as additional information. A check is put into the check box 70 in drawing 5, and mark and a comment are inputted into two columns, "the number of referencing person addition points", and a "referencing person comment", respectively. Next, the number of referencing person addition points and a referencing person comment are registered into the additional information table 30 by pushing the additional information registering button 72. The registered number of addition points can be shared among users.

[0056]An entire configuration, next the entire configuration of the electronic filing system concerning this embodiment are explained based on drawing 6. In particular, in drawing 6, the data flow in conventional technology and the data flow by the new art newly proposed in this embodiment are distinguished and shown.

[0057]First, the client 80 advances a document reference request to the filing server 82 (only henceforth the server 82). This is the demand currently performed from the former. The server 82 outputs a document reference request to the document data base 84 according to this demand. If the document data base 84 returns the contents of a document to the server 82 according to this demand, the server 82 will return the contents of a document to the client 80. And the server 82 updates the reference table 20 for this the demand of every. This reference table 20 very thing was provided in the inside of a system from the necessity on management also in the former in many cases. It being characteristic in this embodiment is having constituted so that file search etc. which released conventionally the contents of this reference table 20 that only the system administrator was able to see to the client 80 and for which the client 80 used the contents of this reference table 20 could be performed.

[0058]The document reference request described above and the updating operation of the reference table 20 are Prior arts as shown in drawing 6.

[0059]Hereafter, new operation is explained in this embodiment.

[0060]If the client 80 outputs reference information retrieval required to the server 82, the server 82 will perform search of the reference table 20 and the additional information table 30. The server 82 of this reference table 20 and additional information table 30 is preferred also for also constituting in a different body, and realizing as a part of function of the server 82, although it is possible. It is also preferred to constitute as other databases of document data base 84 inside.

[0061]By the search from the server 82, the reference table 20 and the additional information

table 30 are searched, and search results are returned to the server 82. The server 82 sends these returned search results to the client 80. Thus, the client 80 can get to know the contents of the reference table 20 or the additional information table 30. Therefore, a user becomes possible [also performing file search etc. using the result of having searched the contents of the reference table 20 or the additional information table 30].

[0062]On the other hand, from the client 80, it is also possible to require registration of additional information of the additional information table 30 spontaneously. If this demand is outputted to the server 82, the server 82 will register new additional information into the additional information table 30. As mentioned above as additional information, in order to show the feature which is hard to express with the number of addition points showing evaluation of the user to the contents of a file, and mere mark, it is also preferred to make a comment into additional information. Various information, including text, not only figure information but picture information, etc., can only be added.

[0063]The flow of the processing in a flow of operation, next the server 82 is explained based on a flow chart. The flow chart showing the flow of processing of the server 82 is shown in drawing 7.

[0064]First, in step S7-1, analysis of the request from a user (client 80) is conducted.

[0065]Next, in step S7-2, it is inspected whether the request from a user is extraction or a display of a document. In being extraction of a document and a request of a display as a result of this inspection, processing shifts to the following step S7-3, and in being the other request, processing shifts to step S7-6.

[0066]In step S7-3, the server 82 requests from the document data base 84 the processing which displays extraction processing of a document or its contents.

[0067]In step S7-4, acquisition of a user ID, the document ID to which extraction processing or display processing is performed, and the present date ** is performed.

[0068]In step S7-5, the data acquired in the above-mentioned step S7-4 is written in the reference table 20. The fact that the user accessed the predetermined document is recorded on the reference table 20 by this.

[0069]When the request from a user is not extraction or a display of a document in the above-mentioned step S7-2, in step S7-6, it is inspected whether it is a request of search of reference information. In being a request of search of reference information as a result of this inspection, processing shifts to the following step S7-7, and in being the other request, processing shifts to S7-8.

[0070]In step S7-7, search with the reference table 20 and the additional information table 30 is performed, and the result of this search is returned to a user from the server 82.

[0071]On the other hand, when it is judged that the request from a user is not search of reference information in the above-mentioned step S7-6, it is inspected whether the request of a step S7-8 smell lever is a request of registration of additional information. As a result of this inspection, in being a request of registration of additional information, processing shifts to the following step S7-9, and in being the other request, it completes processing, without processing at all. Of course, when it is judged that a request is not registration of additional information in step S7-8, shifting to predetermined error handling is also preferred.

[0072]In step S7-9, information is added to the additional information table 30 according to the request from a user. When this addition is successful, the server 82 receives the client 80 again in the purport that a success was ended.

[0073]As more than the conclusion stated, according to this embodiment, it constituted so that

reference information might be stored in the reference table 20 and a referencing person could store a score, a comment, etc. in the additional information table 30. And since it constituted so that the server 82 might manage these information, when change arises to the terminal which accesses the document data base 84, personal information can be referred to freely and it becomes possible to prevent transmission of useless information.

[0074]Thus, when personal information is released, it is possible to become possible to make into a retrieval object not only the static information that the file has but dynamic personal data, and to realize more precise file search etc.

[0075]Speaking more concretely, it being characteristic in this embodiment that reference information is managed by the server [not a terminal but] side. Therefore, even if a terminal changes, it is possible to visualize a reference condition (for example, information on often being referred to or not being referred to at all etc.). A specific user is able to search and find out the file currently referred to frequently by releasing such information to a predetermined group. In the case where this learns a strange field etc., it is possible to search and find out the file which the user well versed in the field is often referring to, or recommends. Thus, by managing reference information by the server side, it becomes possible to grasp individual information value (an individual says the value as which which expresses whether useful information is sent to a group), and it becomes possible to visualize the individual influence in an information society.

[0076]

[Effect of the Invention]As stated above, according to the 1st this invention, the file system which can check promptly whether it is useful information for itself is obtained. [whether since each user was able to refer to it the file was referring to personal information in the past, and]

[0077]According to the 2nd this invention, since file search can be performed based on personal information, it is possible to perform more precise file search.

[0078]According to the 3rd this invention, since the evaluation to the contents of the file is included as personal information, it becomes possible to get to know the validity of the file.

[0079]According to the 4th this invention, since the comment to the contents of a user's file is included as personal information, it becomes possible to get to know the contents of the file promptly.

[0080]According to the 5th this invention, since the reference recorded information over a file is released to each user, the file system which can get to know referring frequency etc. easily is obtained.

[0081]According to the 6th this invention, since file search is performed based on reference recorded information, precise file search in consideration of referring frequency etc. can be performed.

[0082]According to the 7th this invention, since the file name is contained as reference recorded information, it is possible to get to know the use frequency to the file.

[0083]According to the 8th this invention, since the user name is included as reference recorded information, it is possible to get to know the file which the user uses mostly.

[0084]According to the 9th this invention, since the time of a reference day is included as reference recorded information, it is possible to get to know change of reference of the file by time.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is an explanatory view showing the composition of the table of the filling system concerning this embodiment.

[Drawing 2] It is an explanatory view showing the example of the file search screen in the filling system concerning this embodiment.

[Drawing 3] It is an explanatory view showing the result searched based on the file search screen shown in drawing 2.

[Drawing 4] It is an explanatory view showing the retrieval picture in the case of performing file search based on file reference information.

[Drawing 5] It is an explanatory view showing the result searched based on the file search screen shown in drawing 4.

[Drawing 6] It is a lineblock diagram showing the composition of the filling system concerning this embodiment.

[Drawing 7] It is a flow chart showing the flow of operation of the server of the filling system concerning this embodiment.

[Description of Notations]

10 A file control table and 20 A reference table and 30 Additional information table, 50 A menu and 52 [A check box and 72 / An additional information registering button and 80 / A client and 82 / A server, 84 document data bases.] A text field and 54 A search start button, 56 reset buttons, and 60 A check box, 62 extraction button, and 70

[Translation done.]

ファイル管理テーブル

10

ID	ファイル名	作成者名	作成日	

参照テーブル

20

AccID	ID	参照日	参照者名	

付加情報テーブル

30

AccID	参照者付加点数	参照者コメント	

Fig. 1

ファイル検索画面例

メニュー 50

テキストファイル 52

28.1

ファイル検索

ファイル名

作成者名

作成日

=

▽

=

▽

>

▽

検索開始

リセット

test*

kojima

96/01/01

ファイル管理テーブル
の要素に対する検索
項目

54

56

Fig 3

ファイル検索結果

	ファイル名	作成者名	作成日
<input type="checkbox"/>	test1.txt	kojima	96/2/21
<input type="checkbox"/>	test2.txt	kojima	96/2/28
<input type="checkbox"/>	test3.txt	kojima	96/5/2
<input type="checkbox"/>	test4.txt	kojima	96/5/31
<input type="checkbox"/>	test5.txt	kojima	96/6/14
<input type="checkbox"/>	test6.txt	kojima	96/8/17

取り出し



60

62

メニュー 50

テキストファイル 52

h.g.

ファイル参照情報検索

ファイル名	=	>	test*	ファイル管理テーブルの要素に対する検索項目
作成者名	=	>	kojima	
作成日	>	>	96/01/01	
参照回数	=	>		
参照日	>	>	96/10/01	参照テーブルの要素に対する検索項目
参照者名	=	>		
参照者コメント	=	>	*	付加情報テーブルの要素に対する検索項目
参照者付加点数	>	>	7	

検索開始

リセット

ファイル参照情報検索結果表示例

ファイル参照情報検索結果

	ファイル名	作成者名	作成日	参照回数	参照日	参照者名
<input type="checkbox"/>	test1.txt	kojima	96/2/21	31	96/9/10	kojima
<input type="checkbox"/>	test1.txt	kojima	96/2/21	31	96/8/5	higano
<input type="checkbox"/>	test1.txt	kojima	96/2/21	31	96/5/26	yasuda
<input type="checkbox"/>	test2.txt	kojima	96/5/31	5	96/5/1	iwata
<input type="checkbox"/>	test2.txt	kojima	96/5/31	5	96/7/4	gonsho
<input type="checkbox"/>	test3.txt	kojima	96/10/17	12	96/9/10	kojima

付加情報

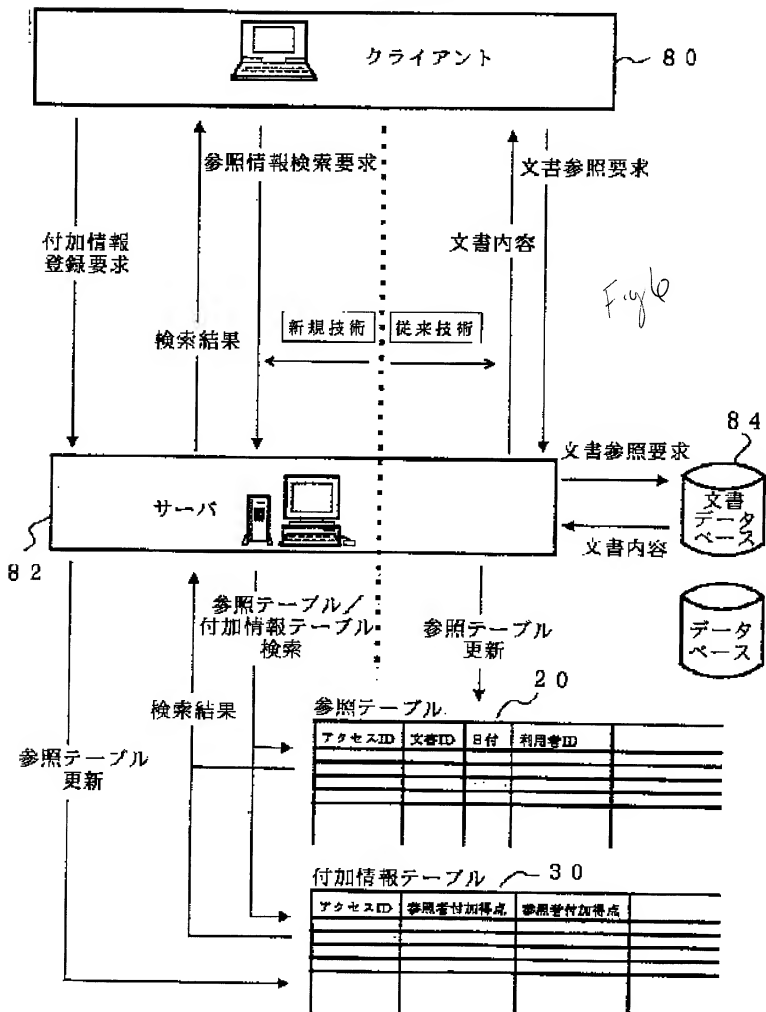
参照者付加点数

参照者コメント

付加情報登録







処理の流れ

Fig 7

